PRE-REHABILITATION PLAN
McDowell Lake (Stevens County)

I. PROPOSAL

A. Justification for Proposed Rehabilitation

B. Physical Description of Water Proposed for Rehabilitation

l. WATER: **McDowell Lake**
2. LOCATION: Sec's 6, 7, and 8, T34N, R41E, Stevens County
3. SURFACE ACRES: 69 MAXIMUM DEPTH: 29 feet
4. VOLUME: 690 acre-feet; 1,875,170,938 lbs H_2O. Note: due to drawdown of reservoir, volume will be reduced to 225 acre-feet; 611,468,784 lbs H_2O.
5. OUTLET: Yes. Drawdown will preclude outflow at the time of treatment.
6. STREAM: Yes. Inlet stream is a diversion from North Fork Bear Creek. The diversion will be shut off prior to treatment, so won't be flowing.
7. PUBLIC ACCESS: Yes.
8. LAND OWNERSHIP: Public 100%.
9. ESTABLISHED RESORTS: None.

C. Proposed Management Actions

1. WATER: **McDowell Lake**
2. TARGET SPECIES: Tench
3. DATE LAST REHABBED: October 2006
4. PROPOSED TREATMENT DATE: September-November, 2014
5. REPLANTING DATE: Spring 2015
6. SPECIES: Rainbow trout
7. CATCHABLES: 3,000 FRY/FINGERLINGS: 2000
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: ≤4.0 ppm AMOUNT (ROTENONE AT 5% ACT. INGRED): 278 gal
9. METHOD OF APPLICATION: Helicopter spray
10. CREW DESCRIPTION: Leader(s) Bill Baker, Personnel ~ 4

II. PURPOSE:

The Washington Department of Fish and Wildlife (WDFW) provides many types of fisheries in response to public desires. WDFW manages both trout and warmwater recreational fisheries using multiple species of fish, providing diverse recreational angling opportunity. Public demand for, and participation in, trout fisheries is high. Trout fisheries managed for catch-and-release and fly-fishing only are prized as opportunities for intermediate to expert anglers; provide outdoor opportunity during the spring, summer, and fall months; and are also integral to state and local economies.

Alternatives to rehabilitation of McDowell Lake are costly or impractical. Stocking of catchable-sized trout would not provide a comparable fishery, as growth rates and recruitment of stocked trout fry provide a combination of high catch rates and numerous fish reaching in excess of 16

inches.

III. INTENDED OUTCOME/MEASURE OF SUCCESS:

WDFW intends to restore McDowell Lake to a popular catch-and-release fly fishing opportunity maintained through fry-stocking of rainbow trout. The average catch rates should be 10+ fish/angler on the opener with a sustained catch rate of 5+ fish/angler for the duration of the season. Spring fry should be a minimum of 11 inches, and carryover catch should be 25-30 percent of the overall catch. Success will be measured during Opening Day and random creel contacts and biological surveys. Beneficial effects of lake rehabilitation should be expected to last approximately 6 to 8 years under current management schemes. In addition to reasons listed under Resource, Recreational and Economic Impacts, to abandon this lake as a trout fishery is to invite other illegal fish introductions across the state in trout-only managed lakes.

IV. RESOURCE IMPACTS:

1. The population of the target species (tench) will be severely and negatively impacted. These species are not desired for a fishery under the current lake management plan.

2. Regional Lands, Habitat, Wildlife and Non-Game managers have been apprised of our rehabilitation plans. No unmitigated concerns have been expressed on the potential impacts to non-targeted species.

3. According to Bradbury (1986), the effects of rotenone on benthos are variable, depending on the concentrations and species. Crustaceans are most tolerant while the smaller insects are most affected. Immediate reduction of populations averages 25%, and survival doubles when access to bottom sediments exists. Benthic communities generally recover to at least pretreatment levels within two months. Zooplankton is more severely impacted, and communities generally take two to twelve months to fully recover. While relatively tolerant of even heavy doses of rotenone, amphibians (especially larval) are at risk, and reptiles are affected somewhat less so. Almost no chance of eliminating an entire population exists.

4. During treatment, the lake will be closed to angling, and other recreational uses such as boating, and swimming will be curtailed. There will be no loss of a fishery associated with our activities. McDowell Lake will be stocked to provide a fishery with catchable sized rainbow trout in the spring of 2015, prior to the Lowland Lakes Opening Day and subsequent fry stocking of rainbow trout will sustain the fishery in future years.

5. Professional biologists and other naturalists have visited these sites frequently over the past 40 years. To our knowledge, no endemic, rare, threatened or otherwise listed species will be adversely impacted by the rehabilitation.

V. MITIGATING FOR ADVERSE IMPACTS:

1. Trout fry survival and growth for the proposed water will be greatly enhanced, and the future trout fishery will attain the previous status. No removal of dead fish is planned as the nutrient base contained therein is best returned to the lake.

2. Fall rehabilitation will not interfere with waterfowl spring nesting. The eradication of the undesirable fishes will also benefit waterfowl through increased production of invertebrates. Stocked populations of trout will not be as numerous as the current undesirable fish population.

3. Livestock use of the waters to be treated will not be significantly affected. The concentration of rotenone used in the treatment will be far below that considered harmful to mammals. The landowners will be notified of the rehabilitation and consequent exposure of livestock to rotenone.

4. No endemic, rare, threatened or otherwise listed species are known to inhabit this area.

5. Protective wear for the eyes, face, body and hands will be available for all purveyors of rotenone.

6. Lakes will be posted according to Department of Ecology guidelines to notify the public of the treatment and discourage the public from possessing or consuming dead fish.

VI. RECREATIONAL IMPACT:

See Section III.

Angler catch rates should reach 10+ fish/angler on the Opener and 5+ fish/angler sustained harvest for the duration of the season. Yearling trout should average about 11 inches. Carryovers should be expected to be make up about 25-30 percent of the catch, averaging 16 inches for 2-year-olds and 16 inches for 3-year-olds.

VII. ECONOMIC IMPACTS:

An estimated minimum of 2000 trips are made to McDowell Lake annually as a result of current fish management. This results in an increased economic impact totaling $75,800 per year (1991 dollars; based WDW estimate of $37.90 per trip). If the project is successful for 8 years it will generate a minimum of $606,400 in economic activity. The total annual cost to plant this lake with trout fry is less than $300. The rehabilitation will cost the Department about $55,805 (including costs of rotenone, time, travel, etc.). The investment by the State will be realized within one year following treatment.

VIII. RELATED MANAGEMENT ACTION:

See I.C.6. for fish planting data

Increased penalties and enforcement activities are desirable if WDFW is going to dissuade illegal stocking of state managed waters. Educating the public about the costs in Department dollars and time with emphasis on what WDFW might be able to accomplish with those resources would be a very worthwhile activity for O & E. This may result in stemming recruitment to this ill advised group and turning local opinion against the offenders.

IX. PUBLIC CONTACT:

Public meetings will be held during July 2014 in Colville and Olympia to explain WDFW's 2014-15 rehabilitation proposals, assess public opinion, and address local concerns.

Initiated by: Region 1 Fisheries Management